



EUROPEAN PATENT APPLICATION

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 accordance with Art.76 EPC: **0 294 405**

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**Tubular projectiles.**

A tubular projectile suitable for use in training ammunition comprises a hollow tube having formed in the rear end (5) of the tubular wall thereof a recess (11) in which is embedded a tracer material comprising a flexible polymer bonded pyrotechnic composition eg in the form of a cylindrical sleeve.

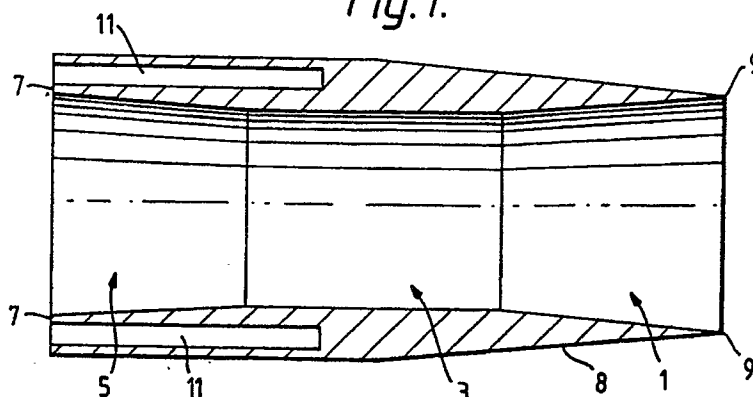
The projectile may be sabot launched.

Constructions are described for igniting the trac-

er material directly or indirectly from the gases produced by burning of the main propellant charge when the projectile is fired from a gun, e.g. the RARDEN Gun of the Applicants.

Example of suitable tracer material and techniques for filling the said recess with them are also described.

*Fig.1.*





European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 90 11 2207

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
D, Y	US-A-3 726 495 (GAWLICK) * Column 1, lines 4-9; column 2, lines 6-20; column 3, lines 25-66; figures 3-5 *	1-5	F 42 B 12/38 F 42 B 10/34 C 06 B 45/10 C 06 C 15/00 C 06 B 27/00
Y	US-A-4 094 711 (JAWAHARLAL RAMNARACE) * Column 1, lines 5-19; column 1, lines 46-57 *	1-5	
A	---	6	
A	US-A-4 495 870 (BELL) * Column 2, lines 24-57 *	1,3-6	
A	DE-U-8 234 827 (DIEHL) * En entier *	1,2	
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			TECHNICAL FIELDS SEARCHED (Int. Cl. 5)
			F 42 B C 06 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 13-11-1990	Examiner VAN DER PLAS J.M.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	



## CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

## ☒ LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

See sheet -B-

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: 1, 2-6



#### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1,2-6: Tubular projectile with a tracer, containing a flexible polymer bonded pyrotechnic composition.
2. Claims 1,7-12: Sabot for a tubular projectile with a tracer.